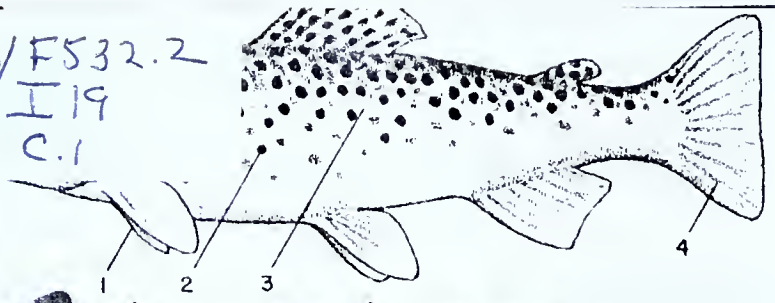
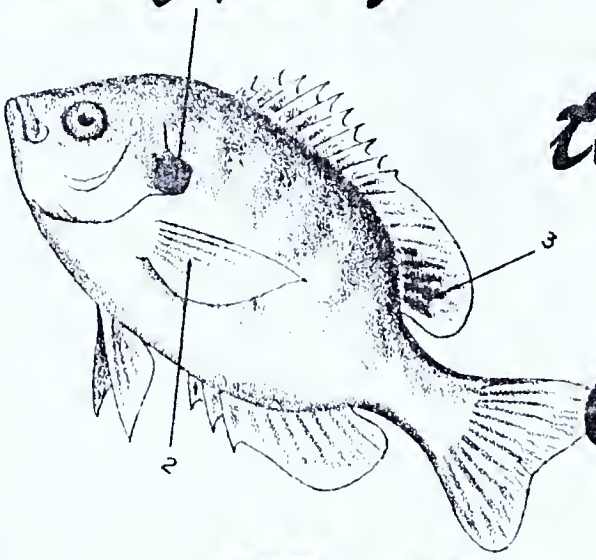
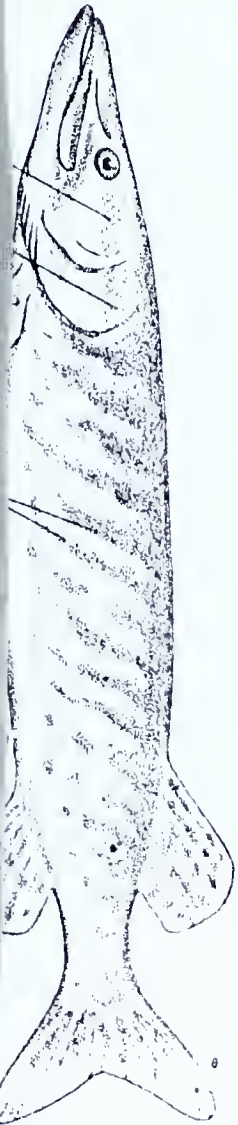
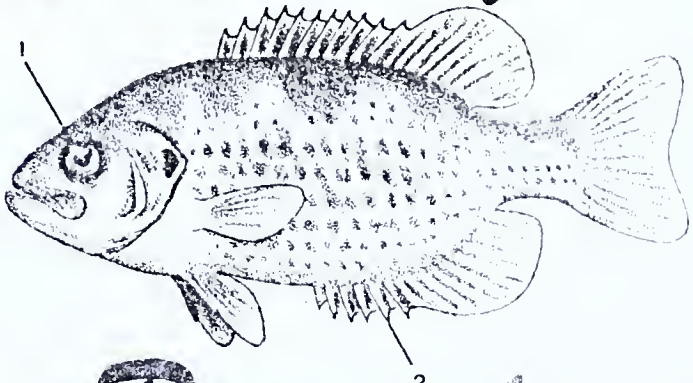


Identifying the Common Fishes of







Identifying the common

FISHES

of Pennsylvania

By
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Benner Spring Fish Research Station
Pennsylvania Fish Commission

Introduction

MANY people consider the names and identification of fish as something to concern only the "experts." This, of course, is not true since everyone should be interested in the species of fish he has caught. First, the fish laws are written around species, and secondly, it adds a little to the esthetic values of angling to have a better understanding of fishes. It is hoped that the following outline will aid in helping the average angler to know which fish he has caught.

Color is more often than not a poor guide for the identification of fish. Because of different environmental and hereditary factors, fish of the same species may range in color from very light to black. However, most fish fall within a standard color range which, under most conditions, is easily recognizable. Also, hybridizing of species such as sunfishes often confuses the issue. Mechanical injuries may play a part in the structure of a fish which may be misleading.

The scientific names are included here because of the confusion which arises when so many common names are given to the same species in different localities or even in the same locality. The rock bass is a good example of this. It is variously called red eye, redeye bass, rock bass, goggle-eye, rock sunfish, etc. From this point of view, it should be easily understood that scientific names are important since one species of fish has only one scientific name regardless of locality, state or country.

It is hoped that the following key is simplified enough to make identification of the designated fish easy.

An attempt was made to pick out the characters of these fish which are most obvious to visual inspection. Usually the most marked characters for separating one fish from any other of that particular type or family have been chosen.

The procedure is a follows:

The number of the sketch of the fish corresponds to the number under "Distinguishing Characters." For example, the bluegill has a Number 1 with a line pointing to the gill flap. Reading Number 1 under Distinguishing Characters beside it, it states, "Short, black gill flap - no red." Therefore, this is one identifying character. Since there might be some doubt about this one character, usually more are added to make the identification more certain.

The following key is considered to be for mature fish only.

Distinguishing the Families of Game and Pan Fish of Pennsylvania

1a. Adipose fin present . . . . . Go to 2

1b. Adipose fin not present . . . . . Go to 3

2a. Body scaleless with chin barbels present. . . . Catfish family—Ictaluridae, page 23.

2b. Body with scales, body distinctly spotted. . . . Trout family—Salmonidae, page 18.

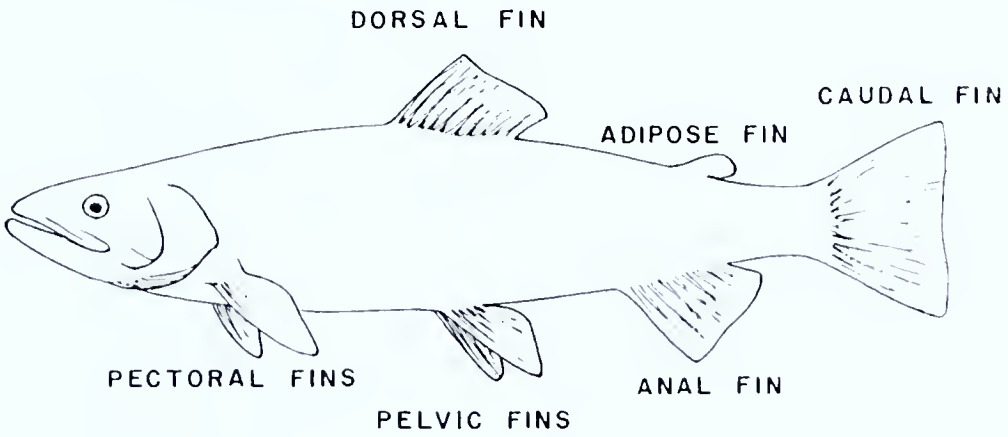
3a. Duck bill snout, dorsal fin set far back on body with no spines.. . . . Pike family—Escocidae, page 20.

3b. Not with duck bill-snout, dorsal fin set near middle of body with definite hard spines . . . . . Go to 4

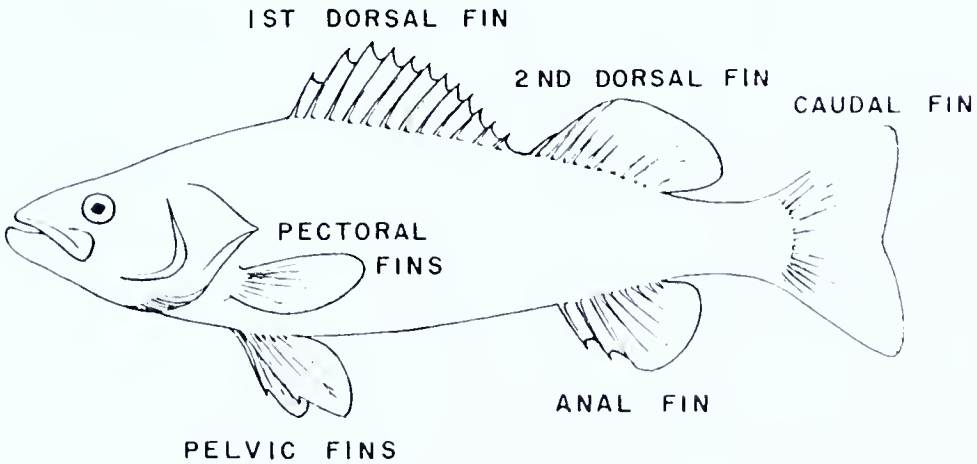
4a. One dorsal fin with spines and soft rays (Dorsal fin of largemouth bass almost separated). Sunfish family—Centrarchidae, page 27.

4b. Two distinct dorsal fins, anterior with spines. Perch family—Percidae, page 26.

TOPOGRAPHY OF A SOFT-RAYED FISH



TOPOGRAPHY OF A SPINY-RAYED FISH



THE TROUT *(Family—Salmonidae)*

THERE are four species of trout in Pennsylvania—the brown trout, the rainbow trout, the brook trout and the lake trout. The brook trout and possibly the lake trout are native to Pennsylvania. In the late 19th century lake trout were planted in many lakes in the northeastern portion of the state, and the current stocks may have originated from these plantings. The brown trout are made up of many strains imported from Europe. The rainbow trout originated from the Pacific drainage of the west coast of the United States.

The variations in color within the species are very striking due to heredity, water factors, foods, physical conditions and hatchery stocks. It is said that some of the present brook trout strain reared in the hatcheries originated from Canada, via the Trexler Hatchery in Allentown, about 1916.

All trout reared in the hatcheries today are fall spawners but originally the rainbow trout spawned in the spring. Hatchery selection has moved their spawning time to early fall.

Wild trout lay their eggs in gravel depressions called redds which are formed by the actions of the female's fins and body. After the eggs are fertilized they are covered with gravel by the female and the parents have no more to do with the eggs or young. Mortality is high among young trout because they exist in a helpless state as sac-fry for a long period of time, depending on the water temperature.

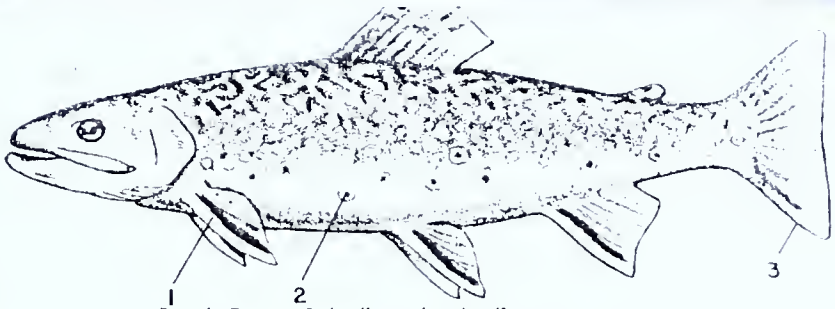
The trout, which is a member of the salmon family, has one characteristic which is not present in many fishes. This structural difference is the presence of the adipose fin, the fatty fin without rays which is found between the dorsal and caudal fins.

. . The brook trout *(Salvelinus fontinalis)* is probably the most beautiful of the native fishes. The back is olive-green, mottled with dark gray overmarkings. This color pattern is carried through on the dorsal fin. The color on the sides grade to lighter shades on the belly. The red spots on the sides, when present, have blue halos. Maximum length in Pennsylvania is about 20 inches.

The lake trout *(Salvelinus namaycush)* is not common in Pennsylvania but does provide fishing for enthusiasts in a few lakes in the northeastern portion of the state and has been introduced into northwestern Pennsylvania in recent years. The color and the markings on the back are somewhat similar to the brook trout with its mottled pattern. The sides are spotted with light yellow or whitish spots but no red spots are present. This is a fish of comparatively cold, deep lakes. It does not run up streams to spawn, but spawns on shoals within the lake. Maximum length reported in Pennsylvania is about 32 inches.

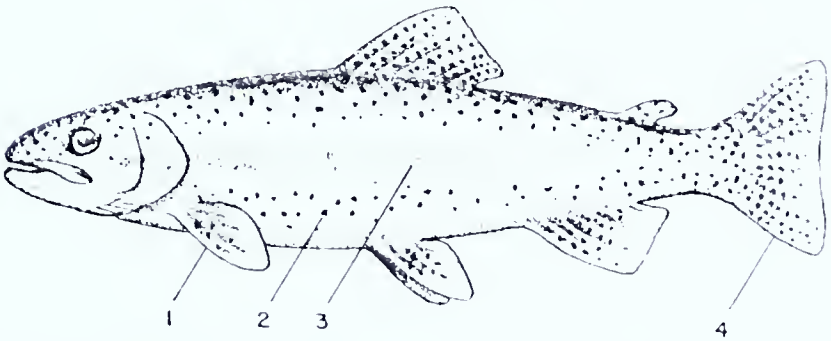
The name of the brown trout *(Salmo trutta)* implies the color. The back is dark brown grading to a lighter shade on the sides. It usually has large black spots and may have reddish orange spots with paler halos around them. Maximum size in Pennsylvania is about 30 inches.

The rainbow trout *(Salmo gairdneri)* gets its name from the horizontal pink stripe on its sides. When first caught, this band reflects the light and gives the trout a rainbow pattern. Numerous small black spots are found on the sides, the back, and on the dorsal and caudal fins. Maximum size in Pennsylvania is about 30 inches.



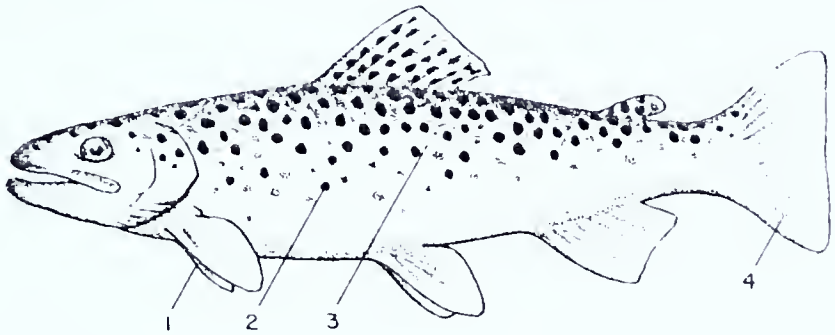
Brook Trout *(Salvelinus fontinalis)*

1. Front edge of pectoral fin margined in white.
2. Usually red spots or yellow spots on body.
3. Tail square.



Rainbow Trout *(Salmo gairdneri)*

1. Pectoral fins not margined in white.
2. Usually many small black spots on body, never red spots.
3. Body greenish, adults usually with pinkish lateral stripe.
4. Tail heavily spotted.

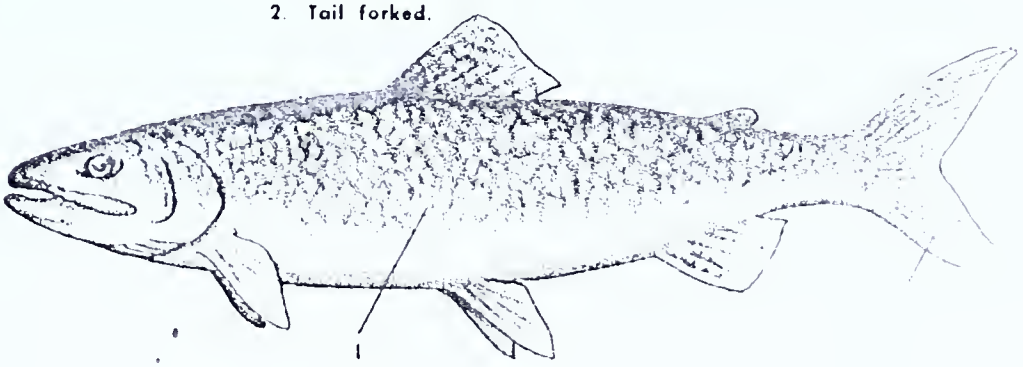


Brown Trout *(Salmo trutta)*

1. Pectoral fins not margined in white.
2. Scattered dark spots on body, usually interspersed with red or yellow.
3. Body has brown color tone.
4. Tail with no spots or few scattered spots on upper tail.

Lake Trout *(Salvelinus namaycush)*

1. Never red spots, but yellow spots sometimes present.
2. Tail forked.



THE PIKES *(Family—Esocidae)*

THIS family is represented in Pennsylvania by four species and one subspecies. The muskellunge, northern pike, chain pickerel, redfin pickerel and the grass pickerel, which is a subspecies of the redfin, represent these species. The morphological (structural) differences between the redfin and grass pickerel are slight, but the range is different and distinct. The redfin pickerel is found east of the Allegheny Mountains and the grass pickerel, sometimes called mud pickerel, is found to the west of the Allegheny Front. In this publication, these two pickerels will be considered as one species.

Members of the pike family are early spawners and often lay their eggs soon after the ice melts in the spring of the year. The adhesive eggs of pike are deposited on the bottom and on aquatic vegetation and left unattended after fertilization, which occurs immediately after the eggs are extruded. The mortality of the fry is high since they attach themselves to aquatic vegetation and are comparatively helpless. During this stage the piscivorous (fish eating) pan fishes and other fishes feed heavily on them. By late summer the immature fish are well developed and well adapted for taking care of themselves and can be seen darting among the weeds looking for prey.

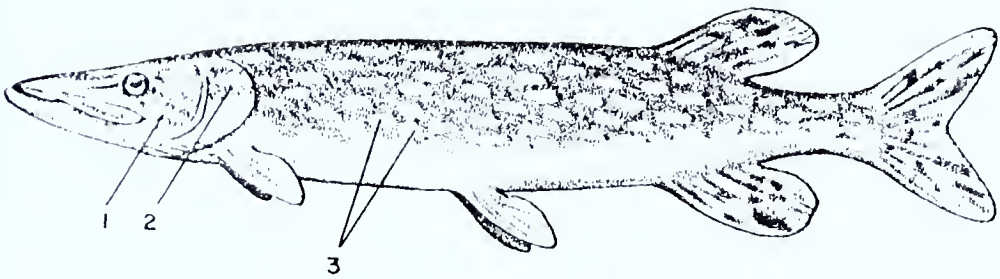
The pike family, which is found in Europe, Asia, and North America, is noted for its voracious appetite. Because of the insatiable appetite, it is a good game fish—taking artificial and natural baits equally well. Sportsmen hold them in high esteem because they are gamey. The grass pickerel is an exception to this because it rarely becomes large enough to be considered as a game fish.

The muskellunge *(Esox masquinongy)*, is usually gray-green, with light vertical bars on the sides of the body and fins spotted with black. The older, larger fish tend to be more plain on the sides. The muskellunge was originally found in western Pennsylvania but in recent years it has been introduced into all sections of the Commonwealth. The world's record for this largest member of the pike family is 69 pounds and 15 ounces.

The northern pike *(Esox lucius)*, in good condition is a beautiful fish. When freshly caught, the body ranges from yellow green on the sides to a dark green on the back. They are marked with small yellow spots on the sides and the fins are varicolored with red and black markings on the rays. The original range of this fish was northwestern Pennsylvania. The American record is 46 pounds and 2 ounces.

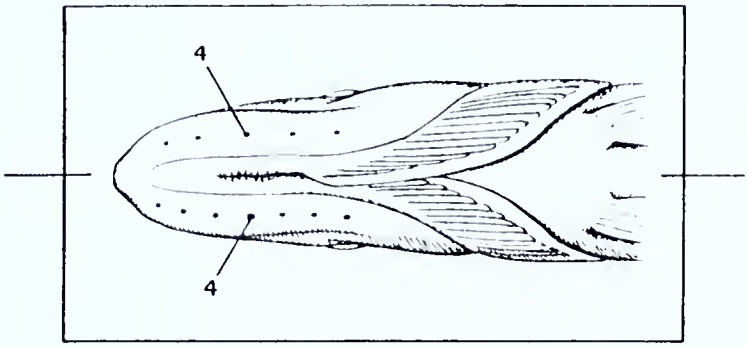
The chain pickerel *(Esox niger)*, is dark green on the back grading into a yellow chain-like pattern on the sides. The fish are found in the Atlantic drainage with the peak of their abundance in the northeastern counties. Maximum length is about 30 inches.

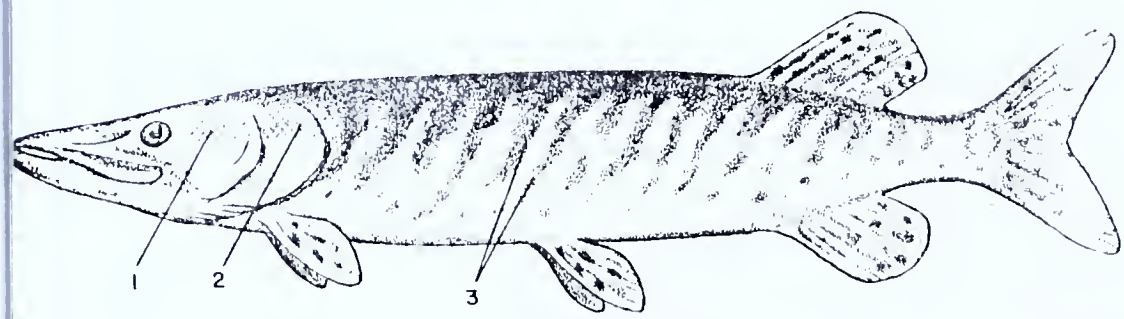
The redfin *(Esox americanus)*, and the grass pickerel *(Esox a. vermiculatus)* are collectively known as the little pickerels. They have dark green sides with usually about 20 distinct dusky bars. The maximum length is about 12 inches.



Northern Pike
(Esox lucius)

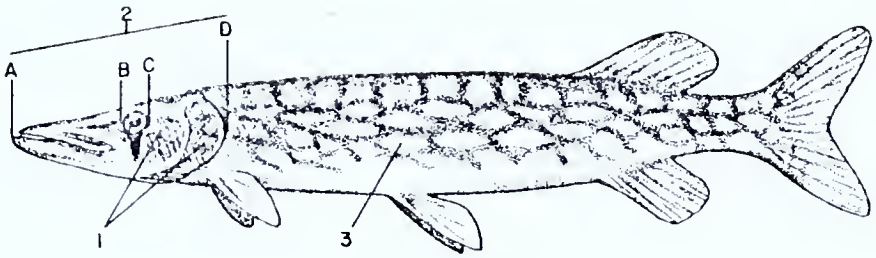
1. Cheek fully scaled.
2. Opercle scaled only on upper half.
3. Yellow bean-like spots on sides.
4. (Insert) Five pores on each side of lower jaw.





Muskellunge
(Esox masquinongy)

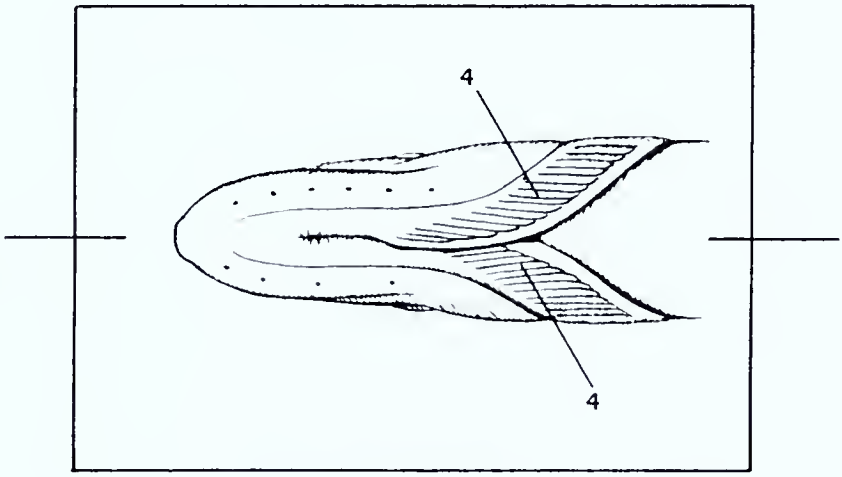
1. Cheek scaled only on upper half.
2. Opercle scaled only on upper half.
3. Side plain or with vertical bars.
4. (Insert) 6-9 pores on each side of lower jaw.



The Choin Pickerel

(Esox niger)

1. Cheeks and gill cover fully scaled.
2. Distonce from tip of snout (o), to front of eye (b), greoter thon distance from back of eye (c) to end of gill cover (d).
3. Chain-like pottern on sides of adults.
4. (Insert) Branchiostegols 14-16.



The Gross Pickerel and Redfin Pickerel

(Esox americonus vermiculotus and *Esox* o. *omericonus)*

1. Cheeks and gill covers fully scoled.
2. Distonce from tip of snout (o), to front of eye (b), less than distance from back of eye (c), to end of gill cover (d).
3. Sides with dark verticol bars.
4. (Insert) Bronchiostegol 11-13.

THE CATFISHES *(Family—Ictaluridae)*

THE catfish family is composed of rather distinct scaleless fishes with a spiny ray in the dorsal fin and a spine in each pectoral fin. Another unique character is the whisker-like barbels on the chin. The catfishes, like the trout, have a fleshy adipose fin.

This bewhiskered family of fishes can be divided into three groups. Anglers are best acquainted with the channel and white catfishes and the brown, yellow and black bullheads. Also important to fishermen, but only as a baitfish, are the stonecats and madtoms. The madtoms, often mistakenly called stonecats, rarely exceed 3 to 4 inches while the true stonecats rarely exceed 6 to 8 inches.

Madtoms and stonecats can be distinguished from the young of larger catfishes by the adipose fin which is free in the larger catfishes and attached to the back over its entire length in the little catfishes.

The catfishes spawn in the spring at varying times depending on the species. Channel catfish prefer to spawn in obscure places such as overhanging banks or muskrat holes while the bullheads will spawn in saucer-shaped nests in the mud. The madtoms spawn under rocks in streams. The nest and young are guarded by the parent for a short length of time. Catfishes do well in either clean or muddy streams.

Catfish are usually caught on natural bait such as worms or minnows.

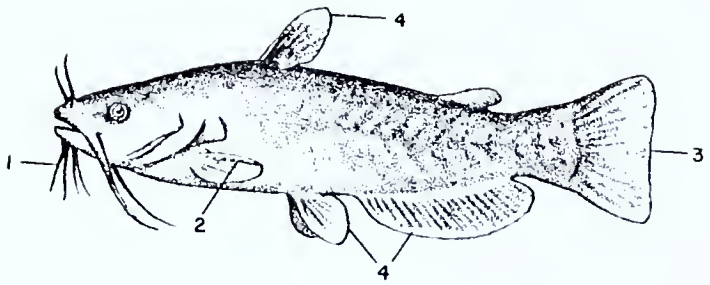
The brown bullhead *(Ictalurus nebulosus)* is very common throughout Pennsylvania. The color is usually brown varying from olive green to a dark brown with more or less mottled sides. Maximum length is about 14 inches.

The black bullhead *(Ictalurus melas)* does not grow as large as the brown bullhead but has a stouter body. The body color ranges from brown to black and the sides are not mottled. Its original range in Pennsylvania was in western Pennsylvania rather than in the Atlantic drainage. Maximum length is about 12 inches.

The yellow bullhead *(Ictalurus natalis)* is a short, heavy fish with a yellowish to brown body and usually a yellow belly. It is widespread in Pennsylvania and grows to a maximum length of 16 inches.

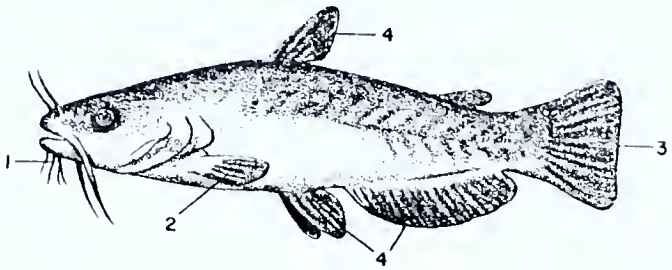
The channel catfish *(Ictalurus punctatus)* is one of the larger catfish. It has a slender body with a comparatively small head and a mouth with very long barbels. The body is usually a bluish olive color and grades to a silvery gray on the sides. All are spotted to some extent except adult males. Maximum weight is about 25 pounds.

The white catfish *(Ictalurus catus)* is a bluish olive color above grading to silvery on the sides. The body is stout and the head is broad. It is native to the rivers in the Atlantic drainage. Maximum length is about 24 inches.



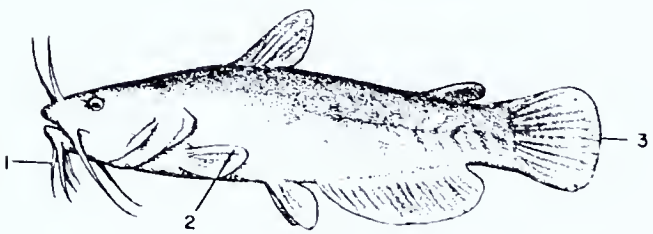
Brawn Bullhead *(Ictalurus nebulosus)*

1. Chin barbels gray to black
2. Pectoral spine with heavy barbs
3. Caudal fin square
4. Fin membranes not jet black



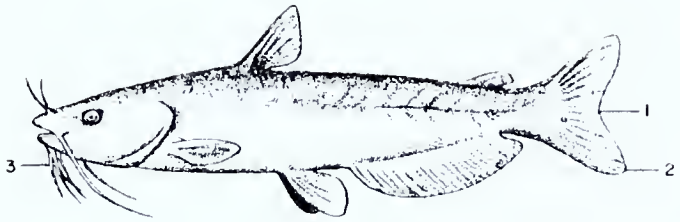
Black Bullhead *(Ictalurus melas)*

1. Chin barbels usually black
2. Pectoral spine with weak barbs
3. Caudal fin square
4. Fin membranes jet black



Yellow Bullhead *(Ictalurus natalis)*

1. Chin barbels whitish
2. Pectoral spine with no barbs
3. Caudal fin rounded



White Catfish *(Ictalurus catus)*

1. Caudal fin moderately forked
2. Lobes of caudal fin rounded
3. Chin barbels white

Channel Catfish *(Ictalurus punctatus)*

1. Caudal fin heavily forked
2. Lobes of caudal fin pointed
3. Chin barbels black

Distinguishing Bullheads and Catfish from Madtoms and Stonecat

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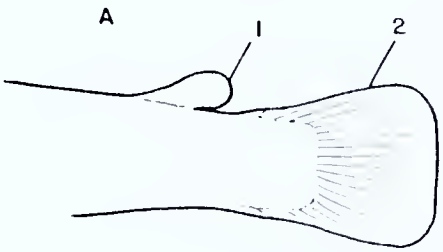
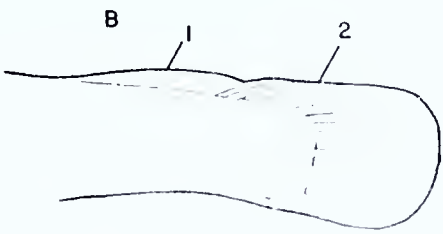
A. Bullheads and Catfish

1. Adipose fin not attached to caudal fin
2. Caudal fin





B. Madtoms and Stonecat

1. Adipose joined to caudal fin
2. Caudal fin

THE PERCHES *(Family—Percidae)*

INCLUDED in this family are the walleye, yellow perch, sauger, blue pike and numerous species of darters. The members of this family have an elongated body with two distinct dorsal fins, one of which is spinous. The anal fin also has one or two spines.

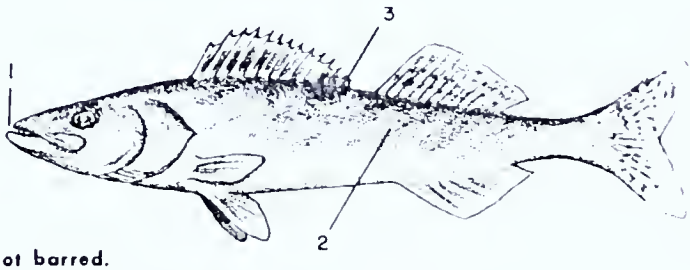
The yellow perch and walleye are found in lakes and rivers, the sauger and blue pike occasionally in Lake Erie while the darters are usually considered stream dwellers.

The perches are spring spawners, the spawning period occurring usually in April and May. The spawning habits are varied; the yellow perch lay their eggs in ribbon-like masses in shallow water; the walleye disperse their eggs randomly over gravel shoal areas and the darters vary their spawning habits according to species

All members of the perch family are carnivorous, feeding on crustaceans, insects and fish. Anglers seek these fish by casting, trolling and still fishing using a variety of artificial lures and live bait. Only the walleye and yellow perch enter the catch enough to be considered important game and pan fish in Pennsylvania.

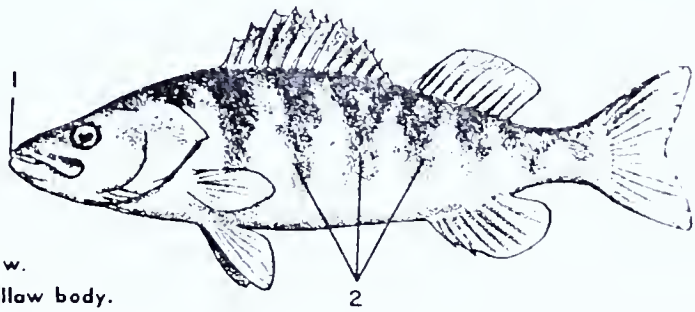
The walleye *(Stizostedion vitreum)* is a brassy colored fish with irregular spots, not in rows, visible on the dorsal fins. The walleye is generally found in the larger rivers, lakes and reservoirs in Pennsylvania. The maximum size is about 30 inches.

The yellow perch *(Perca flavescens)* varies in color, the sides being yellow or green with six or more vertical cross-bars. The belly is white and the back usually dark green. The maximum size is about 14 inches.



Walleye *(Stizostedion vitreum)*

1. **Sharp pointed teeth on lower jaw.**
2. **Body brassy, yellow olive in color—not barred.**
3. **Large black blotch at posterior base of spinous dorsal fin.**



Yellow Perch *(Perca flavescens)*

1. **No sharp pointed teeth on lower jaw.**
2. **Six or more dark vertical bars on yellow body.**

THE SUNFISHES *(Family–Centrarchidae)*

This family is represented by the sunfishes, crappies and the black basses. They are spiny, ray fishes with a spinous anterior, and a soft-ray posterior, dorsal fin. These fish have deep, narrow bodies and usually a characteristic color pattern. However, due to hybridizing of the sunfishes there are many variations as to exact structural and color patterns. For example, the bluegill and the pumpkinseed often cross and the resulting young are difficult to classify.

The sunfish group are nest-builders which reproduce in the spring or summer months. The saucer-shaped nests are tended by the male until the eggs hatch. After this, the fry are usually shephered by the adult until old enough to fend for themselves. The mortality among the young is high, but the tremendous reproductive capacities of these fish usually keep waters that are adapted for these species well stocked.

These fish are important to the anglers as pan fishes. Since they eat chiefly insects, crustaceans and other fishes, they take bait such as worms, flies and other artificials equally well according to prevalent conditions.

The sunfish family is native only to the North American continent. Sunfishes fall into three major groups, the true sunfishes (bluegill, green, redbreast, longear, pumpkinseed, bluespotted, warmouth and rock bass), the crappies (black crappie and white crappie) and the black basses (largemouth and smallmouth).

The rock bass *(Amblaplites rupestris)* is a robust fish. The color is dark olive with dark mottlings. The sides have a brassy reflection. It sometimes has a blotch on the gill flap which is tipped with white or gold. Maximum size is about 12 inches. The rock bass is distributed state-wide with the best populations usually in the larger bass rivers.

The green sunfish *(Lepomis cyanellus)* is a short stocky fish usually an olive-green color with a brassy tint on the lower sides and belly. The maximum size is about 9 inches. This fish is distributed throughout the state.

The warmouth *(Chaenobryttus gulosus)* is brownish in appearance and superficially resembles the rock bass. The color varies from olive to gray with mottled markings on sides and back. The maximum size is about 11 inches. The warmouth is rare in Pennsylvania but is occasionally found in Lake Erie and the Allegheny River drainage.

The redbreast sunfish *(Lepomis auritus)*, sometimes called yellowbelly sunfish, usually is yellow on the sides with the belly surface between the pectoral fins a dark yellow, or, in breeding season, a red color. The maximum size is about 12 inches. It is found only in the Atlantic drainage with the largest population usually in the bass rivers.

The pumpkinseed *(Lepomis gibbosus)* is one of the most common sunfishes in Pennsylvania. It closely resembles the bluegill. The body is light olive with a sprinkling of various colored spots on the sides. On the cheeks are wavy blue bars. Maximum length is about 10 inches and it is found state-wide.

The bluegill *(Lepomis macrochirus)* has a wide variety of colors. This coloration will vary from transparent pale yellow to a dark, metallic blue. Often 6 to 8 vertical bars are visible on the sides of this fish. Maximum length is about 12 inches and it is found state-wide.

(Continued next page)

THE SUNFISHES—*(Concluded)*

The longear sunfish *(Lepomis megalotis)* is highly colored with a basic olive color tinted with orange spots. The maximum length is about 4 inches. This fish is rare in Pennsylvania and is found in the Lake Erie and Allegheny River drainage.

The bluespotted sunfish *(Enneocanthus gloriosus)* is a uniquely colored fish with the basic body coloration varying from light olive to almost black. The spots on the body follow a definite lateral pattern and range from light yellow to dark blue. Maximum length is about 4 inches. This sunfish is found in the Atlantic drainage.

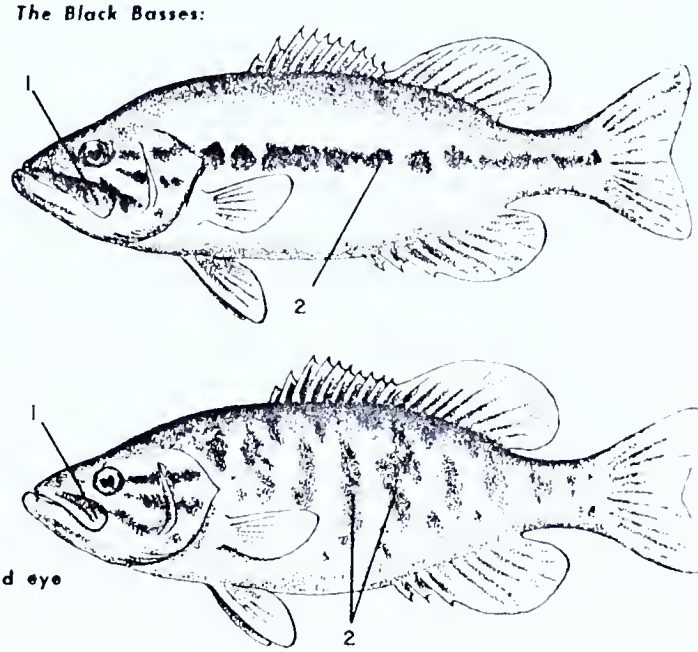
The white crappie *(Pomoxis annuloris)* is a thin-bodied fish with sides of silvery olive grading to green or brown on the back. The maximum size is probably about 18 inches and it is distributed throughout the state.

The black crappie *(Pomoxis nigromaculatus)* is similar to the white crappie in color, but the body is deeper in proportion to the length. Maximum size is about 16 inches and it, too, has a state-wide distribution.

The smallmouth bass *(Micropterus dolomieui)* has a brownish cast to the body with vertical dark, olivaceous bars. Maximum length is about 24 inches. It is found state-wide and usually in large numbers in the major rivers.

The largemouth bass *(Micropterus salmoides)* is a distinctive green colored fish with a dark lateral bar of black blotches. The body of the larger fish is usually more robust than the smallmouth. Maximum size is about 26 inches. It is found state-wide usually more predominantly in lakes than in rivers.

The Black Basses:



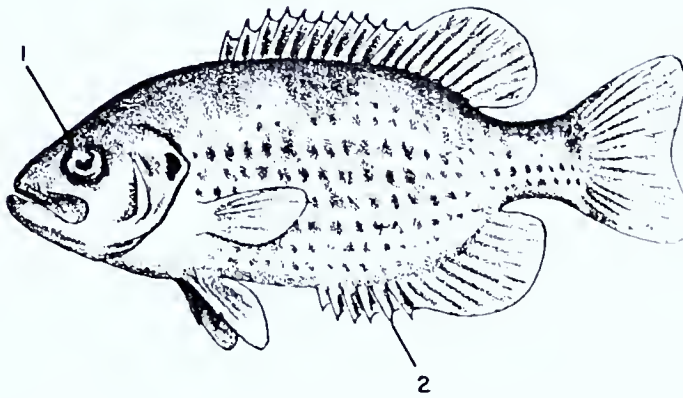
Largemouth Bass—*(Micropterus salmoides)*

1. Upper jow extends beyond eye
2. Usually brood black stripe

Smallmouth Bass—(Micropterus dolomieui)

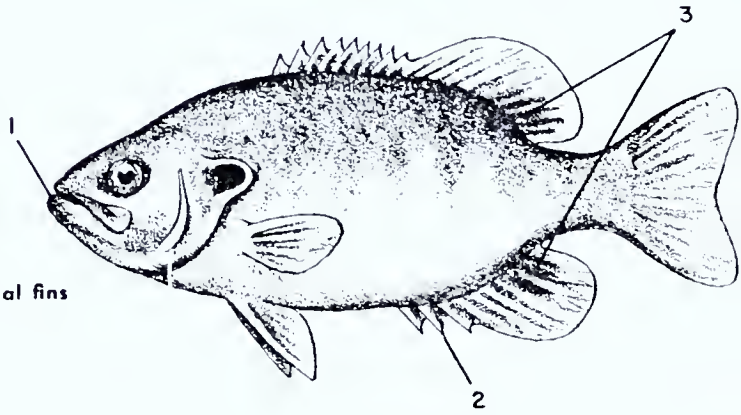
1. Upper jow does not extend beyond eye
2. Vertical bars on sides

Mouth Beyond Front of Eye:



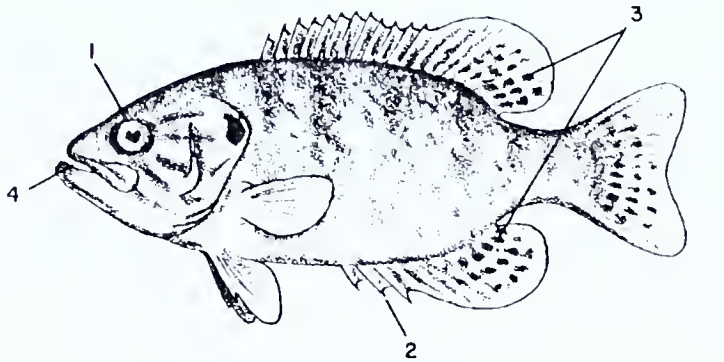
Rock Bass—*(Ambloplites rupestris)*

1. Red eye
2. Six spines on anal fin



Green Sunfish—*(Lepomis cyanellus)*

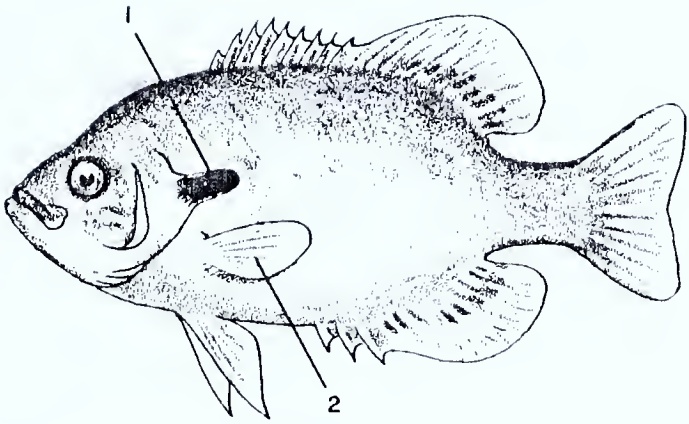
1. Heavy lips and large mouth
2. Three spines on anal fin
3. Black blotch on dorsal and anal fins



Warmouth—*(Chaenobryttus gulosus)*

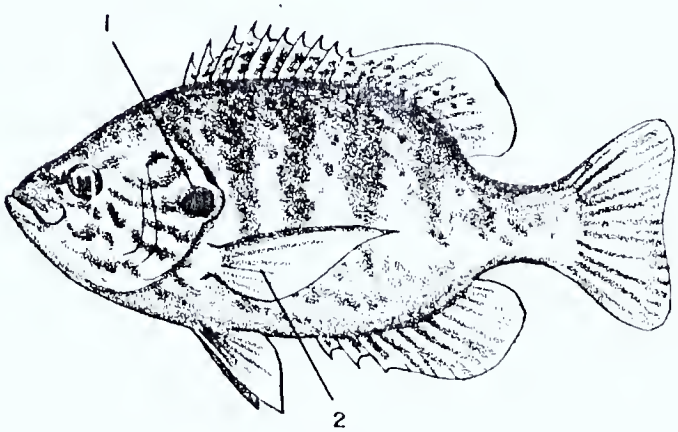
1. Eye redish
2. Three spines on anal fin
3. Spots on dorsal and anal fins
4. Teeth on tongue

Mouth Not Beyond Front of Eye:



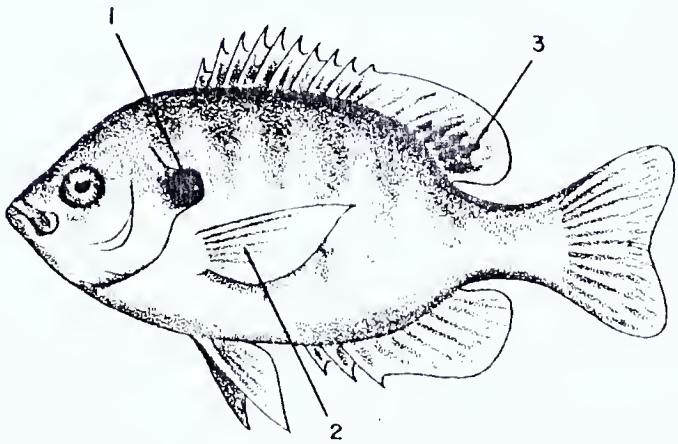
Redbreast Sunfish—(Lepamis auritus)

1. Gill flap black, lang and narrawer than eye—na red
2. Pectaral fin short and raund



Pumpkinseed—(Lepamis gibbasus)

1. Gill flap black with bright red tip
2. Pectaral fin lang and painted



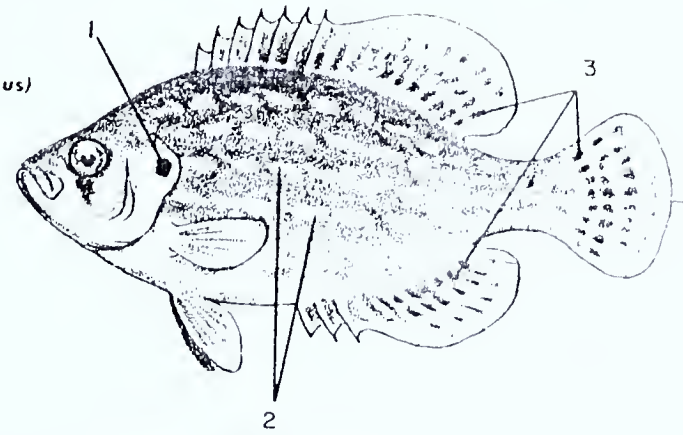
Bluegill—(Lepamis macrochirus)

1. Braad black gill flap—na red
2. Pectaral fin lang and painted
3. Black blatch an darsal fin

Sunfish Which Seldom Exceed Four Inches in Length:

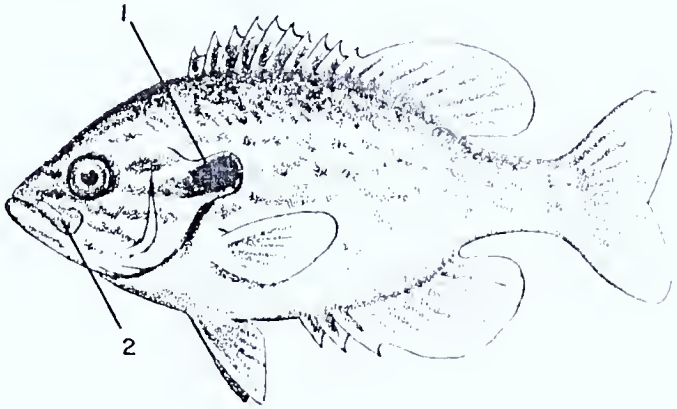
Bluespotted Sunfish—*(Enneacanthus gloriosus)*

1. Gill flap short, black spot
2. Light spots form lateral lines
3. Unpaired fins spotted
4. Tail rounded



Longear Sunfish—*(Lepomis megalotis)*

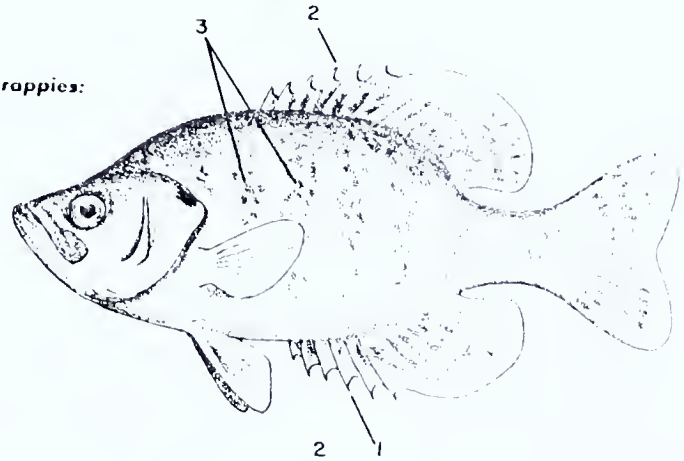
1. Gill flap long and narrow, bordered with scarlet
2. Mouth moderately large, ending under eye



The Crappies:

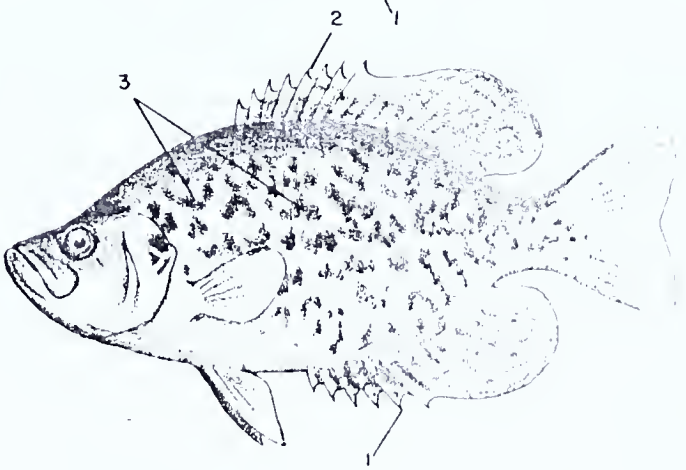
White Crappie—*(Pomoxis annularis)*

1. Six anal spines
2. Six dorsal spines
3. Spots usually in 7 or 9 bars



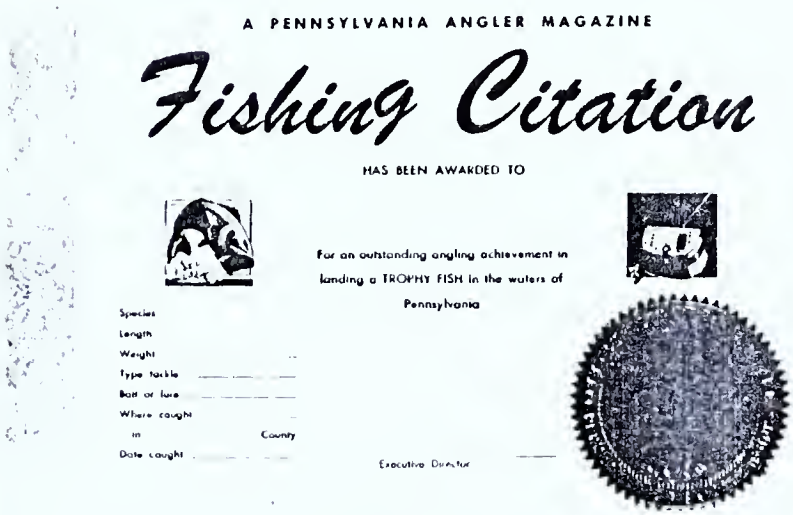
Black Crappie—*(Pomoxis nigromaculatus)*

1. Six anal spines
2. Seven or eight dorsal spines
3. Spots scattered irregularly



PENNSYLVANIA'S MOST DISTINGUISHED

Angling Award



FOR CATCHING A TROPHY FISH

in

PENNSYLVANIA'S PUBLIC WATERS

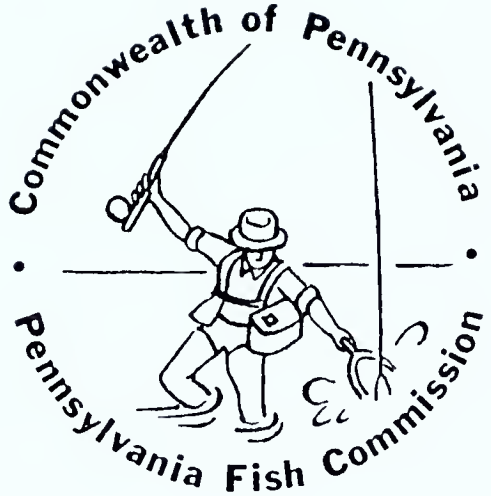
Species Minimum Size Limits, Rules and Regulations, Application Forms as shown in the

PENNSYLVANIA ANGLER

Pennsylvania's Finest Fishing Magazine

may be obtained by writing:

The Editor
Pennsylvania Fish Commission
South Office Building,
Harrisburg, Pennsylvania



Join the

FIGHT

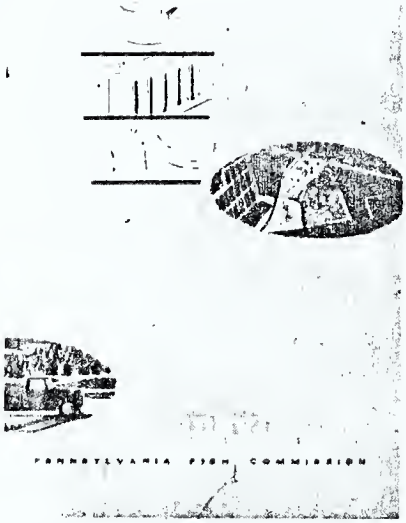
for

CLEAN WATER

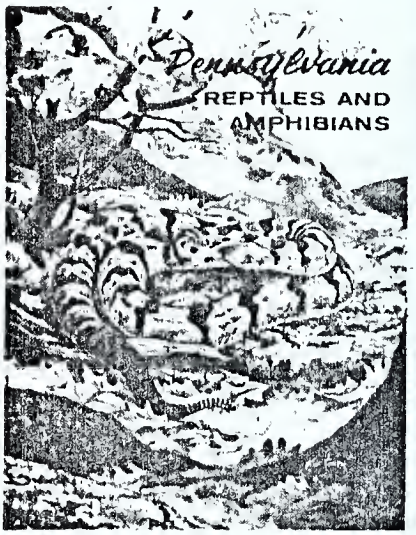
in Pennsylvania

PENNSYLVANIA FISH COMMISSION PAMPHLETS

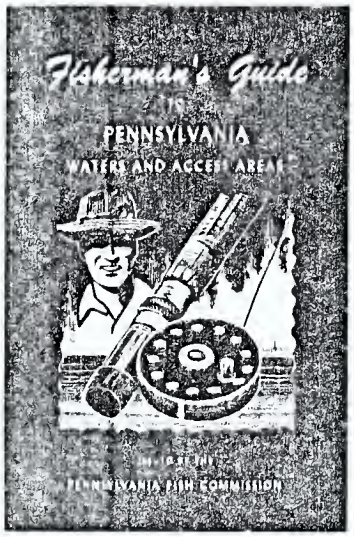
Write: Pennsylvania Fish Commission
Conservation-Education Division
South Office Building, Harrisburg, Penna.



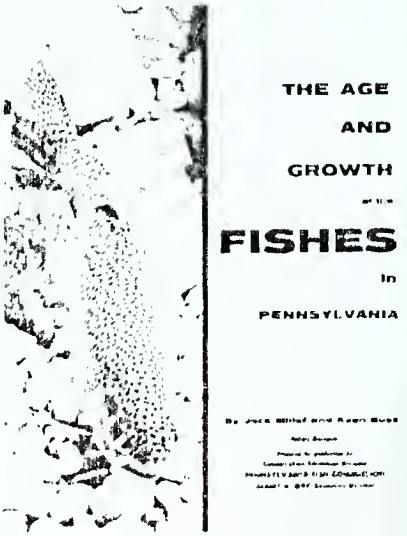
FISH CULTURE IN PENNSYLVANIA . . . A new edition of a popular booklet esteemed by schools, libraries and naturalists which contains a word and photographic description of The Pennsylvania Fish Commission's over-all fishery management and propagation program. Good reference for biology students.



PENNSYLVANIA REPTILES AND AMPHIBIANS . . . contains 22 species of snakes (only three poisonous), 21 species of salamanders, 15 species of frogs, 11 species of turtles and four species of lizards. A popular Fish Commission pamphlet, in colorful, picture-story form, now revised to latest descriptions and classifications under supervision of Carnegie Museum officials.



FISHERMAN'S GUIDE . . . to Pennsylvania Waters and Access Areas listing the streams, lakes and impoundments, mileages, acreages, highway routes to sites and species of fish available. List of access areas; fly fishing, fish-for-fun streams with handy index. Very popular publication.



THE AGE AND GROWTH OF THE FISHES IN PENNSYLVANIA . . . A very fine pamphlet written by Fish Commission fishery biologists describing how the ages of fish are determined, how growth is determined by influencing factors such as spawning, illness, poor water conditions. Charts and tables are excellent.